

**AMENDMENTS TO THE CLAIMS**

Claims 1-5. (Cancelled)

6. (Amended) A multiplexing control system comprising a sensor which detects a state variable in a process; plural microcomputers which are inputted of a process signal detected by the sensor and output a control signal for the process and one of which operates as a master; a process input/output unit which is provided in common for the plural microcomputers and distributes a process signal detected by the sensor respectively to the plural microcomputers, wherein the process input/output unit includes interface boards corresponding respectively to the plural microcomputers and the process signal inputted to the microcomputer operating as the master is written in a memory corresponding to the other microcomputer;

in which process input/output units which input/output process signals are provided for every process signal, ~~characterized in that~~ wherein a redundancy structure of each of the process input/output units which inputs/outputs a concerned process signal is varied depending on the type of the process signals and further a signal of a process input/output unit having small redundancy is designed to be inputted/outputted via a process input/output unit having large redundancy.

7. (Amended) A multiplexing control system comprising a sensor which detects a state variable in a process; plural microcomputers which are inputted of a process

signal detected by the sensor and output a control signal for the process and one of which operates as a master; a process input/output unit which is provided in common for the plural microcomputers and distributes a process signal detected by the sensor respectively to the plural microcomputers, wherein the process input/output unit includes interface boards corresponding respectively to the plural microcomputers and the process signal inputted to the microcomputer operating as the master is written in a memory corresponding to the other microcomputer;

in which process input/output units which input/output process signals are provided for every process signal, ~~characterized in that~~ wherein the process input/output unit for the process signal of a "high" importance is triplexed as well as a process controller having a processing function is provided for each of the triplexed input/output units, the process input/output unit for the process signal of an "intermediate" importance is diplexed, the process input/output unit for the process signal of a "low" importance is monoplexed as well as the output of the respective process signals of the diplexed input/output unit and the monoplexed input/output unit is designed to be processed by either of the process controllers.

8. (Amended) A multiplexing control system according to claim 7, ~~characterized in that~~ wherein by designating one of the triplexed process controllers as having a master right the system is constituted in such a manner that the output control

of the diplexed input/output unit and the monoplexed input/output unit is performed by the unit having the master right.

9. (Amended) A ~~multiplexing~~ method of multiplexing of a multiplexing control system comprising a sensor which detects a state variable in a process; plural microcomputers which are inputted of a process signal detected by the sensor and output a control signal for the process and one of which operates as a master; a process input/output unit which is provided in common for the plural microcomputers and distributes a process signal detected by the sensor respectively to the plural microcomputers, wherein the process input/output unit includes interface boards corresponding respectively to the plural microcomputers and the process signal inputted to the microcomputer operating as the master is written in a memory corresponding to the other microcomputer;

in which process input/output units which input/output process signals are provided for every process signal, ~~characterized in that~~ wherein the redundancy structure of the input/output units for inputting and outputting process signals are either triplexed, diplexed or monoplexed depending on importance of the process signals.